

FACTS ABOUT

Fleet Requirements for Off-Road Large Spark-Ignition (LSI) Engine-Powered Forklifts and Other Industrial Equipment

On May 25, 2006, the California Air Resources Board (ARB) adopted new regulations to reduce emissions from existing LSI fleets. This fact sheet discusses fleet average provisions for medium and large fleets. A separate fact sheet discusses special provisions for agricultural fleets. For general information regarding this regulation, please see: Overview of the New Emission Standards, Test Procedures, and Fleet Requirements for Large Spark-Ignition (LSI) Engine Forklifts and Other Industrial Equipment.

Who must comply with these regulations?

Any person, business, municipal or government agency that owns or operates gasoline-, propane-, or compressed natural gas-fueled off-road LSI fleets in California is subject to the regulation.

What types of equipment are subject to the regulation?

LSI engines of 25 horsepower (19 kilowatt) or greater are most commonly found in forklifts, scrubbers and sweepers, specialty vehicles, portable generators, large turf care equipment, irrigation pumps, welders, air compressors, airport ground support equipment (GSE), and a wide array of other agricultural, construction and general industrial equipment. However, the fleet requirement only addresses four of these categories: forklifts, sweepers/scrubbers, industrial tugs (tow tractors), and GSE. These categories represent nearly 94 percent of the total federally non-preempt emissions of hydrocarbons and oxides of nitrogen (HC+NO_x) from LSI equipment in California.

What does the regulation require of off-road LSI fleets?

LSI fleets must meet the grams per kilowatt-hour (or grams per brake horsepower-hour) fleet average emission level requirements in the table below.

Fleet Type	Number of units	Fleet Average Emission Level		
		1/1/2009	1/1/2011	1/1/2013
Large forklift fleet	26+	3.2 (2.4)	2.3 (1.7)	1.5 (1.1)
Mid-size forklift fleet	4-25	3.5 (2.6)	2.7 (2.0)	1.9 (1.4)
Non-forklift fleet	4+	4.0 (3.0)	3.6 (2.7)	3.4 (2.5)

What actions can a fleet take to meet these requirements?

The quickest way for a fleet to reduce its fleet average is to phase out any uncontrolled equipment. Equipment without catalysts, oxygen sensors and electronic fuel/air controllers can emit 20 times more HC+NO_x than new engines that are already certified to the 2010 0.6 g/bhp-hr level. Uncontrolled equipment may be addressed through retrofit (available for 1990 and newer model year engines), repower with a complying engine, or replacement with a new or used controlled piece of equipment.

Fleets may also incorporate zero-emission equipment where feasible. The capabilities of zero emission equipment such as electric forklifts have increased dramatically in recent years with the advent of more powerful and energy-efficient alternating current traction motors, higher voltage batteries, waterproofing of electronics and batteries, and fast charging.

The first step is to plan your purchases. Identify what your initial fleet average is, what fleet averages you'll have to meet by the 2009, 2011, and 2013 compliance dates, what your fleet turnover rate is, and how zero- and near zero-emission equipment can help you.

Are there any exemptions?

The LSI regulation provides both fleet and individual equipment exemptions:

- Fleets with one to three pieces of forklift and/or non-forklift equipment are considered small fleets and are exempt from the fleet averages in the table above
- Operators of agricultural crop preparation services fleets do not have to meet the fleet averages either, but must address their uncontrolled 1990 and newer LSI forklifts through retrofit.
- In-field agricultural forklifts are exempt from the LSI regulation
- Equipment that is leased or rented for a period of no more than 30 aggregated calendar days per year are exempt from the fleet average requirement
- Equipment that is leased or rented for more than 30 days, but less than one year may be excluded from the fleet average calculation provided that:
 - the lease or rental component comprises no more than 20 percent of the operator's equipment (any rental or lease equipment in excess of 20 percent must be included in the operator's fleet average calculation), and
 - the equipment is controlled to a 3.0 g/bhp-hr standard if in the fleet between January 1, 2009 and December 31, 2010 and a
 - *****2.0 g/bhp-hr standard if in the fleet on or after January 1, 2011.

Are there special provisions for low-use vehicles?

LSI equipment used 250 hours per year or less may be excluded from the fleet average calculation until January 1, 2011. By that time, the piece of equipment must be either retrofitted or repowered with a controlled engine, or retired.

Will incentive funding be available?

Yes. California has the largest clean air incentive program in the nation, the Carl Moyer Program, with up to \$140 million available each year primarily through the local air districts. The Carl Moyer Program provides grant funding to offset the incremental capital cost of cleaner technologies, provided that the installation or replacement yields emission benefits that go beyond the requirements of the regulation or occur at least three years early. Many fleets may be able to access Carl Moyer Program funds in advance of their 2013 compliance date. To find out more about Carl Moyer Program funding, go to <http://www.arb.ca.gov/msprog/moyer/moyer.htm>

Where can I find more information about the regulation?

The LSI staff report and regulatory text can be accessed from <http://www.arb.ca.gov/regact/lore2006/lore2006.htm>

Further information, including other fact sheets, presentations, frequently asked questions, and a list of verified retrofit emission control systems, is available on the LSI regulation website at <http://www.arb.ca.gov/msprog/offroad/orspark/orspark.htm>

For additional general information

For general information, please contact ARB's LSI hotline toll-free at (800) 387-2992. You may also obtain this document in an alternative format by contacting the ARB at (916) 322-4505 (voice); (916) 324-9531 (TDD, Sacramento area only); or (800) 700-8326 (TDD, Outside Sacramento). TTY/TDD/Speech-to-Speech users may dial 711 for the California Relay Service.